

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

Disposition of Claims

Claims 1-15 were pending in this application. By way of this reply, claims 1, 8, and 12 have been cancelled without prejudice or disclaimer and new claims 16-18 have been added. Thus, claims 2-7, 9-11, and 13-18 are pending in this application. Claims 2 and 4 are independent. The remaining claims depend, directly or indirectly, from claim 2 or 4.

Claim Amendments

Claims 2-7, 9-11, and 13-15 have been amended in this reply to clarify the present invention recited. Support for these amendments may be found, for example, in original claims and Fig. 2. Also, the amendments to new claims 16-18 are fully supported by, for example, Figs. 2 and 4, and the descriptions on page 9, paragraph 0018, on page 12, paragraph 0025, and on page 17, paragraphs 0039, of the original specification.

Rejection(s) under 35 U.S.C § 102

Claims 1-4 and 8-15 stand rejected under 35 U.S.C. § 102 as anticipated by U.S. Patent No. 5,010,772 (Bourland et al.). Claims 1, 8, and 12 have been cancelled in this reply. Thus, this rejection as it applies to the claims is now moot. Claims 2-4, 9-11, and

13-15 have been amended in this reply to clarify the present invention recited. To the extent that this rejection may still apply to the amended claims, the rejection is respectfully traversed.

Claims 2-4, 9-11, and 13-18

Independent claim 2, as amended, recites a structure of a sensor sheet having a plurality of sensors capable of measuring distribution of multidimensional force. Specifically, as shown in, for example, Figs. 2-5, the sensor 10 of the present invention includes a plurality of electrodes D1-D5 disposed on a film substrate 20, a reference electrode D0 grounded, and a displaceable electrode 30 supported by a supporting member 60 to face the electrodes D0-D5 such that variable capacitance elements are formed by the electrodes D1-D5 and the displaceable electrode 30. The displaceable electrode 30 contacts the reference electrode D0 when an external force is applied thereto, and, as a consequence, a signal passes through the electrodes D1-D5. By this configuration, the sensor 10 can identify the distribution of force on the basis of the detection of changes in capacitance of the capacitance elements by changes in distances between the electrodes D1-D5 and the displaceable electrode 30. More specifically, independent claim 2, as amended, includes the limitation, "a plurality of first electrodes corresponding to the plurality of directions, respectively," and "at least the one of the plurality of sensors is capable of identifying force in a multidimensional direction on the basis of detection of changes in capacitance of the capacitance elements caused by changes in distances between the plurality of first electrodes and the second electrode."

Bourland et al., in contrast, fails to show or suggest at least the above limitation as recited in claim 2. Bourland et al. merely discloses a system for measuring weight or

pressure distribution in manner of supplying driving signals to a pad having measuring nodes arranged in a matrix. Specifically, as shown in Figs. 2 and 3, Bourland et al. discloses a pressure sensitive pad 10 comprising two linear arrays of electrodes 22 and 24 respectively disposed on opposite sides of a compressible dielectric layer 20. The linear arrays 22 and 24 are oriented in a direction perpendicular to each other, and thereby each intersection of an electrode of one array with an electrode of the other array defines a measuring node, which serves as a capacitor. The system of Bourland et al. merely allows a quantified signal to be obtained on a particular node that is desired to measure weight or pressure. Bourland et al. cannot measure force in a multidimensional direction. Thus, Bourland et al. fails to show or suggest at least the above limitations as recited in claim 2.

In view of the above, Bourland et al. fails to show or suggest the present invention as recited in independent claim 2. Thus, claim 2 as amended is patentable over Bourland et al. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested. Also, entry and allowance of new dependent claims 16-18 is respectfully requested.

Claims 4, 7, 11, and 15

Independent claim 4, as amended, also recites a structure of a sensor sheet having a plurality of sensors capable of measuring distribution of multidimensional force. Specifically, as shown in, for example, Figs. 13-16, the sensor 310 includes a plurality of conductive lands D11-D15 and D21-D25 disposed on a film substrate 20 to face each other, and pressure-sensitive resistance inks R11-R15 and R21-R25 disposed between the lands D11-D15 and D21-D25. By this configuration, the sensor 310 can identify the

distribution of force on the basis of the detection of changes in resistance between the lands D11-D15 and D21-D25. More specifically, independent claim 2, as amended, includes the limitation, “a pressure-sensitive resistance member arranged between the plurality of first electrodes and the second electrode,” and “at least the one of the plurality of sensors is capable of identifying force in a multidimensional direction on the basis of detection of changes in resistance between the plurality of first electrodes and the second electrode.”

As mentioned above, Bourland et al. merely discloses a system for measuring weight or pressure distribution in manner of supplying driving signals to a pad having measuring nodes arranged in a matrix. Bourland et al. fails to show or suggest at least the above limitations as recited in claim 4. In fact, there is no mention of a pressure-sensitive resistance member arranged between the linear arrays of electrodes 22 and 24. Again, it is noted that the compressible dielectric layer 20 is arranged between the arrays of electrodes 22 and 24.

In view of the above, Bourland et al. fails to show or suggest the present invention as recited in the independent claim 4 as amended. Thus, claim 4 as amended are patentable over Bourland et al. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection(s) under 35 U.S.C § 103

Claims 5-7 stand rejected under 35 U.S.C. § 103 as obvious over Bourland et al. in view of U.S. Patent 6,373,265 (Morimoto et al.). Claims 5-7 have been amended in this reply to clarify the present invention recited. Claims 5 and 6 depend from claim

2. As mentioned above, in view of the complete lack of disclosure of at least that a sensor is capable of identifying force in a multidimensional direction, Bourland et al. does not anticipate or render obvious claim 2. Thus, claim 2 is patentable over Bourland et al. Dependent claims 5 and 6 are patentable for at least the same reasons. Further, claim 7 depends from claim 4. As mentioned above, in view of the complete lack of disclosure of at least a pressure-sensitive resistance member, Bourland et al. does not anticipate or render obvious claim 4. Thus, claim 4 is patentable over Bourland et al. Dependent claim 7 is patentable for at least the same reasons. Accordingly, withdrawal of the rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 07700.042001).

Respectfully submitted,

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